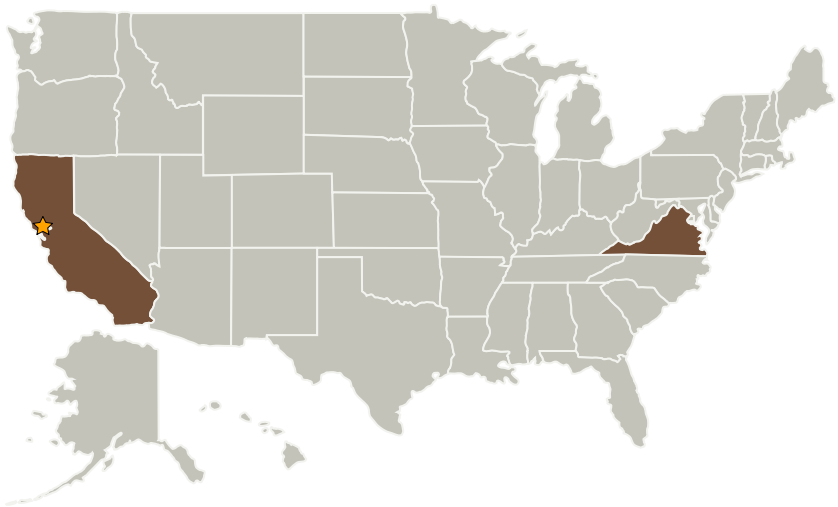
An Integrated Turbulence Hazard Decision Support Tool for Controllers and Dispatchers, Phase I

Completed Technology Project (2006 - 2006)

Project Introduction

Every day, turbulence has an adverse effect on aircraft operations and capacity of the NAS, costing the airline industry at least $100 million annually in operational inefficiencies, unscheduled maintenance, and injuries. A contributor to these costs is that controllers' and dispatchers' current tactical knowledge of turbulence hazards relies heavily on verbal pilot reports of turbulence, which are often inconsistent, late, and subjective. AeroTech will develop a turbulence hazard decision support tool (TurbDST) that will enhance controllers' and dispatchers' situational awareness of the location and severity of turbulence; by providing real-time quantitative turbulence information down-linked from aircraft. TurbDST will enhance tactical and strategic decision making with regard to airspace usage and aircraft routing by enabling users to predict the effect of the reported/detected turbulence on aircraft whose route may take them through that location. With enhanced turbulence knowledge, collaboration with pilots regarding route changes can be improved and cost savings to the airlines can be gained through more efficient and safer aircraft routing. Phase I will prove technical feasibility of integrating the turbulence information and will develop, using controller and dispatcher inputs, CONOPS and requirements for the TurbDST. By Phase III, a meaningful controller/dispatcher TurbDST will be developed, tested, and evaluated.

Primary U.S. Work Locations and Key Partners



An Integrated Turbulence Hazard Decision Support Tool for Controllers and Dispatchers, Phase I

Table of Contents

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Ames Research Center (ARC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

An Integrated Turbulence Hazard Decision Support Tool for Controllers and Dispatchers, Phase I

Completed Technology Project (2006 - 2006)

Organizations Performing Work	Role	Type	Location
★Ames Research Center(ARC)	Lead Organization	NASA Center	Moffett Field, California
Aerotech Research	Supporting Organization	Industry	Newport News, Virginia

Primary U.S. Work Locations	
California	Virginia

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX16 Air Traffic Management and Range Tracking Systems
  - TX16.3 Traffic Management Concepts